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PRICES AND MONETARY AND CURRENCY EXCHANGES OF THE WORLD.

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PRICES AND FOREIGN AND COLONIAL MONETARY AND CURRENCY EXCHANGES OF THE WORLD WORKED BY WEIGHT AND BY MONETARY AND CURRENCY SIGNS;

ALSO

PRICES AS AFFECTED BY AN ALTERED RATIO BETWEEN GOLD AND SILVER.

In dealing with what may be considered to be the very foundation of the Science of Money, permit me to quote from the introduction to the "Universal Merchant" these pregnant words, written by Wm. Horsley A.D. 1753:—

"The acquaintance with the exchanges, however it may seem to "some the business of merchants only in commercial free States, "falls properly under the cognizance of gentlemen, particularly "those who have or intend having any share in the Legislature, "and still more materially such who are in the immediate direction "of public affairs, as without a masterly skill in bullion and coin "it is impossible to understand exchanges, whence singular incon- "veniences may happen in delicate emergencies. There is not any "article of trade in which the gentleman should not be a tolerable "theorist, for many obvious reasons; but in bullion and coins, "whereby other articles are usually adjusted, he should be prac- "tically skilful."

Let each one ask himself, "Have I a masterly skill in bullion "and coin?" This question was asked of one of the leading examinees of the Royal Gold and Silver Commission, 1886–89; he hardly knew what was meant, and upon explanation immediately admitted that he did not possess this skill. The important object of this address is to show that the thorough comprehension of Prices and Monetary and Currency Exchanges imparts skill in bullion and coin. There is no mystery about prices and monetary and currency exchanges.

Money, true money, is a matter of weight. Acquaintance with the monetary exchanges of the world throws light upon the world's monetary prices, and acquaintance with monetary prices throws light upon the world's monetary exchanges. The difficulties in connection with the ready and easy understanding of it is due to the introduction of signs. Weight is the basis of prices and mone-

tary exchanges. We learn that Abraham bought his wife's burial cave for 400 shekels of silver: a shekel is a weight equal to 200 ounces, according to Mons. Pellitier. He weighed out silver for payment in the presence of the party from whom the purchase was made. Had the only name for the money been the weight and the Abrahamic practice continued, it is difficult to imagine that the world could have got into the state in which it at present is upon the subject of prices and monetary exchanges. We have clothed weights with signs, as 113·001605 troy grains of pure gold, a British pound; 4·480359 troy grains of pure gold, a French franc, and have altogether lost sight of weight, the thing signified. We count out pieces of the standard substance in the shape of coins, tokens for it, and promises to pay it under names the meaning of which men know not. No one would advocate the return to Abraham's practice, but a simple method to understand prices and monetary exchanges is to get rid of all signs and thus master the subject, after which to proceed to signs as used in the present day.

It is absolutely essential that every one who would possess more than a parrot knowledge of the science of money should thoroughly comprehend the mechanism of prices and of monetary and currency exchanges. He must hold as a cardinal truth that all produce, manufactures, and properties sent by a country possessing either an effective silver monetary system, or any other of five descriptions of currency, are as good as weighed out against silver, or measured out against currency before leaving, and are, upon reaching a country possessing an effective gold currency, as good as weighed out against gold. The errors that are continually being written by those who fail to grasp this fact are among the indications of the general dense ignorance upon the subject of money, and the failure to realise a fundamental principle among those who would write as authorities upon the science is astonishing to the trader and expert in monetary and currency exchanges.

Prices, and Monetary and Currency Exchanges by Weight.

Instruction.

I. Get rid of all monetary signs, such as the pound, the franc, the dollar, &c. II. Make the name the weight in troy grains of each chief money of account: as 113·001605 troy grains of pure gold, which is the British chief standard money of account. III. Get at *weight*, the thing signified, and think only of that during instruction.

By this means three factors or tools are all that are requisite in scientific automatic metal monetary systems, both for the comprehension of prices and of monetary exchanges. I. Weights of pure gold and pure silver. II. Ratio between gold and silver. III. Deviation from par by premium or discount upon the weight

to be dealt with in one country and to be paid in another country by means of a telegraph transfer or a bill of exchange.

Let us assume for one moment that all the world had one system of weights of gold and silver, the British troy pound, the quarter, the ounce, and the grain, and had no other denominations for money. All prices and monetary and currency exchanges would be actually the pound, the quarter, the ounce, or the grains troy, *or, as at present based, upon a definite weight.* It might be asked, what would be the advantages of such a system? The reply is that it would present prices and the exchanges with such extreme simplicity that no one could fail to comprehend them with the greatest ease. The comparative prices of articles of the same character, quality, and weight in different countries possessing the same standard or measure of value would be known at a glance. The daily ratio between gold and silver resulting from the constant fluctuations of the gold price of silver in gold standard monetary systems, and the silver price of gold in silver standard monetary systems, should be the common property of the reading world through the channels of the daily press. Public opinion should force this into practice as one of the chief items of intelligence of paramount importance to the commercial world. The price of silver in gold standard systems would be a weight of gold for a weight of silver. The division of the weight of silver by the weight of gold at once shows the ratio. With the knowledge of the ratio of the day the comparative prices of articles of the same character, quality, and weight, in countries possessing gold, and in silver monetary systems, is equally simple. The weight of silver divided by the ratio at once shows it. Take illustrations of these statements. Say that A and B are two countries enjoying the most perfect freedom of trade, and both blessed with scientific automatic gold monetary systems. The price of an engine in A is 16,950 troy grains of gold. In B an engine of precisely the same character is 19,492·5 troy grains of gold. A comparison of the weights shows that the engine in B is 15 per cent. dearer than the engine in A. To illustrate the second statement, say that A is a country enjoying free trade, and possessed of a scientific automatic gold monetary system, and B is a country also enjoying free trade, and possessed of a scientific automatic silver monetary system; that the ratio of the day between gold and silver is 35 parts of silver to 1 part of gold; that an engine in A is priced at 16,950 troy grains of gold; that in B an engine of precisely the same character is priced at 711,900 troy grains of silver, the division of 711,900 by the ratio 35, gives 20,340 troy grains of gold, and shows that the engine in B is 20 per cent. dearer than the engine in A.

Having shown the student the advantage of the study of money used in prices by practice with the ancient system of weights, the definition of the world's present monetary and currency systems affecting prices follows.

THE WORLD'S PRESENT MONETARY AND CURRENCY SYSTEMS AS THEY AFFECT PRICES, AND THE FOREIGN AND COLONIAL EXCHANGES BY WEIGHT.

I.—*Monetary Systems.*

I. Scientific Automatic Gold Monetary System.
II. Scientific Automatic Silver Monetary System.

A scientific automatic gold monetary system exists where the Government of the country adopting it does nothing to fetter or favour the substance pure gold. The principle which the Government legislation seeks to give effect to is—that pure gold shall be the standard and measure of value; that the pure gold in bullion appropriated to currency purposes; as well as the pure gold in standard gold coins, should do their work as money by the value-giving factors contained in the substance. To accomplish this the State receives any quantity of gold in the shape of gold bullion from any one and from any place, and returns the same weight of pure gold in the shape of coins, adding the appropriate weight of alloy at the cost of the State, and without any charge to the party presenting the bullion. The law also provides that standard gold coins are unlimited legal tender — that is, if a creditor is owed £1,000,000 he could not refuse to accept 1,000,000 sovereigns. In such a monetary system State or State bank notes, which are only promises to pay a given weight of pure gold on demand, may be made unlimited legal tender, and silver and bronze tokens constituted legal tender for limited amounts of each.

II. *Currency Systems.*

The line of demarcation between a monetary and a currency system cannot be too strongly drawn. The moment that a State cannot meet its notes or promises to pay a definite weight of the standard metal, and a premium has to be paid in paper for the standard metal, that moment a monetary system is gone and a currency system exists in its place on what is inappropriately called fiat money. But, in the opinion of the lecturer, this is not the only system which comes under the accurate definition of a currency system.

There are the following:—

III. *Gold-cum-coinage-charge currency system.*
IV. *Silver-cum-coinage-charge currency system.*
V. *Silver-cum-counter-charge currency system.*
VI. *Inconvertible paper currency system.*
VII. *Unlimited quantities of either gold or silver at the option of the payer system.*

One of the ablest and most esteemed writers upon this class of currency, in fact upon the whole range of money, was Ricardo, A.D. 1809–23. He affirmed, and it must be admitted, "that a coinage charge of 50 per cent. would add 50 per cent. to the purchasing power of the standard coin." This is not the place to enter into the question as to how the standard substance does its work, or into the theories of quantities *versus* quality. But to this dictum of Ricardo might be added the opinion that a State which extracts from its subjects 50 per cent. more of their value-giving factors than is contained in the metal procured for the same, places them in a position which would entitle them to denounce such a tax as unjust and immoral. For to meet their obligations to other countries possessing either an effective gold or an effective silver monetary system, that which should be their most liquid asset would only perform half its work. Since Ricardo's time how vast have become the interchanges between man and man and community and community, and how stupendous the requirement of an intermediary to facilitate these operations. If this intermediary cannot be a monetary one it must be dressed up old rags, the monetary value of which may bear no proportion whatever to the value of the weight of substance they should at par exchange for.

III. & IV. Systems are termed gold-cum-coinage-charge system and silver-cum-coinage-charge system, because a coinage charge, whether it be small or great, is a departure from the principles of a scientific automatic monetary system.

V. System.—The same terms as the last would apply to this silver-cum-counter-charge currency system. The word counter used here needs explanation; it means "anything used as a means of reckoning or of keeping an account," such as numerals recorded in a book. A counter has no intrinsic value. Anacharsis compared money to a counter and Bishop Berkeley defined money as a counter. Instances of this currency are found in the Eastern possessions of the Dutch, where silver currency circulates at 100 per cent. more than the value of the silver; and in British India and elsewhere, where silver circulates at 20 per cent. more than its value.

VI. System.—This may be either of the most degenerate nature of currency, or close on the border line which separates it from a scientific, automatic metal monetary system. It may consist of veritable dressed up old rags which would not purchase a grain of the standard substance which it falsely professes to equal. It may, on the other hand, possess such purchasing power as to command the weight of standard substance which it represents at a small premium in paper for that weight of standard substance.

VII. System.—This is Bimetallism. The taking of two substances and by legislative fixture of ratio between them attempting to weld them into one scientific automatic permanent standard and measure of value.

We have seen how exceedingly simple it would be to understand prices throughout the world if they were quoted in the terms of the British troy weight, provided all currency systems were scientific automatic monetary systems. But since few countries possess scientific monetary systems it is important to know how to resolve the world's prices of to-day into their constituent parts. When travellers visit a country they generally acquire some knowledge of it and its people and customs beforehand. Surely among the most important items of information is that of a country's currency. Yet how many leaving these islands have any intelligent knowledge of money even of their own country, much less of those places they are bound for. Take the simple matter of the current coins of the world—is it not a disgrace that these cannot be freely seen under the head of each country of the world in the East as well as the West of this great city.

To ascertain to which of the six first monetary and currency systems a price belongs, it is necessary to know whether there is a coinage charge in the system, or a counter-charge; or whether the system has degenerated into inconvertible paper. The basis of all money is a weight of pure gold or pure silver in the chief money of account of each monetary and currency system. In estimating prices and monetary and currency exchanges, credit is given that the weights forming the chief standard money of account are the weights contained in the coins as they are issued from the mints. The following are the mint issue weights of pure gold and pure silver in the world's present chief moneys of account, with the monetary sign for one troy grain in each system.*

To save labour multiples of the above weights and of the monetary signs are given in "Norman's Ready Reckoner of the World's Exchanges." The monetary signs are obtained by dividing the parts of each of the world's chief moneys of account by the weight of pure metal in it on issue from the mints. Thus, to find the British monetary sign for 1 troy grain of pure gold, 240 pence divided by 113·001605 troy grains of pure gold gives 2·123863 pence as the monetary sign for 1 troy grain of pure gold in the British Isles and many of the Colonies of the British Empire. To find the monetary sign for 1 troy grain of pure silver in Japan, 100 sens in the yen divided by 374·4 troy grains of pure silver in the yen gives 0·2671 sen as the monetary sign for 1 troy grain of pure silver. Take the following as examples of the use of these two factors in constructing monetary signs and in analysing currency signs. Put monetary signs to 1,000 troy grains of pure gold and to 10 troy grains of pure gold :—

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* Table I. (see pages 30, 31).

GOLD.

	Grains.	Weight.	Monetary Sign.	
British ...	1,000 ÷	113·001605		= £8·8494.
	10		× 2·123863 pence	= 21·2386 pence.
U.S.A. ...	1,000 ÷	23·22		= $4·3006.
	10		× 4·306632 cents	= 43·0663 cents.
French ...	1,000 ÷	4·480359		= f. 223·196.
	10		× 22·31964 centimes	= f. 2·23196 centimes.

SILVER.

Japanese ...	30,000 ÷	374·4			= y. 80·1282.
	94		× 0·26709	sen	= 25·1064 sens.
Mexican ...	30,000 ÷	377·0586			= $79·563.
	185		× 0·2652	cent	= 49·0626 cents.
Chinese ...	30,000 ÷	513·0572			= t. 58·473.
	856		× 1·9491	cash	= 1·6 843.

To analyse monetary or currency signs it is not only necessary to know which of the seven systems is indicated, but also the conditions of the currency of the country using the system. If there is either a coinage or a counter-charge, the amount must be known. In the British system we know that there is neither a coinage nor a counter-charge. Give the grains of pure gold for which £586. 7s. 9d. and for which 18s. 10½d. are monetary signs.

	Troy grains of gold.
£586. 7s. 9d., or £586·3875 × 113 001605 =	66,262·72.
18s. 10½d., or 226·5d. ÷ 2·123863d. =	200·44.

We know that in Scandinavia the coinage charge is ¼ of 1 per cent. Give the grains of pure gold for which k. 925·65 ores and 87 ores are currency signs.

K. 925·65 — ¼ % × 6·222721	= 5,745·66
O. 87·00 — ¼ % ÷ 16·070143 ores =	5·4002

In Japan the Government coinage charge upon silver is 1 per cent., in Mexico it is 5 per cent. Give the grains of pure silver indicated in Japan by the currency signs yens 5,876·32 sens and 75 sens.

	Troy grains of Silver.
Yens 5,876·32 — 1 % × 374·4	= 2,178,368·8
Sens 75 — 1 % ÷ 0·26709 sens =	266·9

Give the grains of silver indicated by the Mexican currency signs $7,843·85 cents and 65 cents :—

$7,843·85 — 5 % × 377·0586	= 3,105,470·7
C. 65 — 5 % ÷ 0·2652 cents =	232·8

It should be evident to every one who gives his mind to the subject that goods priced in bond are less in price than the same goods after duty has been paid upon them by at least the amount paid as duty. Considering the miserable state of the world at

present in its slow, weary progress to unfettered and unfavoured interchanges between man and man and community and community, and the continual and oftentimes most vexatious changes in customs barriers, it would seem impossible to present the world's comparative prices with any degree of precision, and therefore, for any utility, for more than the briefest period of time. If this is true, what is the value of Js. Lowe's proposed table of reference, or G. Poulett Scropes Tabular Standard of value for the British Isles. If Britain's interchanges with her colonies and foreign countries affect British prices, and such a thing as a tabular standard be thought of, could the table be justly limited to prices in one country? In countries where a counter-charge is imposed upon the people, the extent of that charge can only be gauged by the silver price of gold of the day. The difference between the cost of gold in a silver standard country and the purchasing power of silver coins conferred upon them by the action of Government is the measure of the disability of the people to pay their silver metal currency obligations to countries possessing effective silver monetary systems by means of silver. Just now the exchanges between this country and British India show that the silver in the rupee has more purchasing power than the world-wide value of silver by 20 per cent. British India, therefore, could not pay obligations to countries possessing effective silver monetary systems without parting with her value giving factors in silver for 20 per cent. more than is contained in her silver-cum-counter-charge rupee. At present neither British India nor the Dutch possessions in the East possess monetary standards. Silver among these 320,000,000 is a species of counter-currency of more intrinsic value than mere counters.

Foreign and Colonial Monetary and Currency Exchanges by Weight and by Monetary and Currency Signs.

I have never met with any writings of the past, nor writings of the present day, which reveal an intelligent appreciation of the vastly important part which gold and silver play in the world's prices and monetary and currency exchanges. I heartily and thankfully acknowledge that all the great thinkers who have left us their opinions upon money and are in unison with the monometallic views of this age, from Xenophon (B.C. fifth century) to the present time, have done nothing to belittle gold and silver as money. Rather have they esteemed these substances of the greatest importance as measures of value and means of payment, and have consistently taught that money made of gold or silver is intended to be a measure of value and a means of payment, and that to attempt to treat the two metals in the manner bimetallists propose is unscientific.

Whence comes the idea so commonly heard that gold and silver only play a part in international trade as a means of liquidating balances between countries? How many people know that nothing leaves a country without being as good as weighed out against its standard substance, or measured out against its currency intermediary; that nothing enters into any country without going through the same process? Who promulgated the following ideas? "Gold and silver are only small change. The world's business is not done with gold and silver; it is done with interest-bearing securities." But these metals which they call small change are measures of everything, and are themselves trade commodities entering into international interchanges to the extent of £300,000,000 per annum. Would there be no foundation for surmising that it is possible this ignorance and general indifference to the subject of money is due to a settled conviction on the part of some that it is much better for the world that money currency and the exchanges should be viewed as a mystery so dense that the study of it is likely to overthrow a human being's mental balance, and that it is much better for the whole world that certain pieces of paper are viewed as really more valuable than the substance promised on the face of the paper, and that credit is a delicate thing; that it rests on money; that money is a delicate thing; and that both are too delicate for the intelligent handling of a rough work-a-day world? And so this is indeed a case where ignorance is bliss, and it would be a profound mistake to disturb it. Gentlemen, your presence here assures me that you are not satisfied to leave the matter thus, and that you will make the attempt to ascertain whether you can become the possessor of a masterly skill in bullion and coin.

There are four classes of international operations which lie at the bottom of movements of gold and silver throughout the world:—On account of—I. Trade; II. Financial Operations, such as the elevation of a State from an inconvertible paper currency to a monetary system, payment of war indemnity, loans to other countries, &c.; III. Government Action; IV. Speculation. We will notice the movements connected with trade only. International trade interchanges, including that in all properties and interest-bearing securities, &c., resolves itself, in the main, into interchanges between man and man, or company and company. An international trade can be and is carried on without the trader having anything to do with telegraph transfers of money or bills of exchange. His agent or partner sells goods which he sends to him in another country, invests the proceeds, which have been measured in the currency of the country where sold, in some other goods. These goods are sold in the trader's country. The proceeds compared with the cost of the parcel of goods which he sent out shows his gain or loss. The writer saw the extensive rise of this character of

business in Calcutta. He for a long time thought that the trader who freed himself of all monetary and currency exchanges would be almost secure of profit; but he is not. His goods enter into competition with goods which have been subject to an international monetary or currency exchange, and all that he can save is, other things being equal, the small profit the exchange operator or banker might have made out of the transaction should the trader have had dealings with him. A trader deals only in exports to a country, and receives back the sale proceeds of his goods in a telegraph transfer of money, or a bill of exchange, or gold or silver metal. If there were no such instruments as telegraph transfers and bills of exchange, he would have to get gold or silver in return.

Monetary and Currency Exchanges by Weight.

We have seen that there are seven descriptions of prices in the world, but there are only six descriptions of monetary and currency exchanges. The seventh description of price does not exist as a system of monetary or currency exchanges. Since 1873 there has been no such thing as entire Bimetallism in the world. Bimetallism has two sides—a receptive and a distributive. On the closure of the world's mints in Europe and the U.S.A. against the reception of silver from the public in unlimited quantities, Bimetallism ceased. We have therefore to deal only with six monetary and currency systems of foreign and colonial exchanges. It should be mentioned that the countries of the world which professedly aspire for Bimetallism, and whose currencies have not degenerated to inconvertible paper, measure and carry on their international trade by means of gold.

You have heard that by bringing the ancient practice with money into the present time, three factors or tools only are necessary in operating monetary exchanges:—I. Weight of gold and silver; II. Ratio between gold and silver; III. Deviations from par by premium or discount upon the amount to be exchanged in the country originating the transaction. Table I. presents to you the Mint issue weight of pure metal in the chief standard moneys of accounts in the monetary systems of the world, together with the monetary sign for one grain of pure metal in each monetary system, also the weight in troy grains of pure metal by which silver is sold in gold-standard countries, and by which gold is sold in silver-standard countries, together with constants attached to each system for determining the ratio between the metals.

For the purpose of instruction monetary signs will be stripped from the exchanges; weights alone will be dealt with in this part of my subject. So long as the world uses two monetary standard substances there must be a constantly varying ratio between them; it was so when the mints of the countries forming the Latin Union

and of the U.S.A. were open to the unlimited reception of both gold and silver at arbitrary fixed ratios of 15½ parts of silver to 1 part of gold in the former countries, and at 16 to 1 in the U.S.A. Weight for weight of gold or weight for weight of silver there is no difficulty in determining the percentage increase or diminution of the gold weighed or of the silver weighed. The following rules are suggested for the scientific working of the world's foreign and colonial monetary and currency exchanges :—

I. Work by weights.

II. Invariably make the fluctuation from fixed or absolute pars in the country originating the operation, and for the whole chief money of account of the system with which the exchange is made.

Fixed Pars.

In these instructions and illustrations monetary signs are introduced as a secondary and unimportant matter. The name standing first is that of the country which originates the transaction.

Name.	G. or S.	grains of Gold.	,, Silver.	Sign.	Name.	G. or S.	grains of Gold.	,, Silver.	Sign.
Britain ...	G.	4·526	9·61	pence.	For France ...	G.	4·48035[2]		franc.
France ...	G.	111·8716	f.24.96·93	centimes.	,, Britain ...	G.	113·001605		pound.
Japan	S.	507·9266	135·648	sens.	,, Shanghai..	S.	513·0572		tael.
Shanghai..	S.	378·184	735·318	cash.	,, Japan	S.	374·4		yen.

Here the deviations from par are shown at a glance.

Working the exchanges by monetary signs instead of by weights of pure metal leads to confusion, error, and loss. This arises from using a monetary quotation, both as a multiplier and a divisor. No fog envelopes the working of the exchanges by weight. So great an authority as Mr. Goschen, in his seventh edition, 1866, of his classical work "The Theory of the Foreign Exchanges," fell into the trap, and called a discount a premium and a premium a discount. Take a simple illustration of this. A British sailor in France wishes to exchange some English money, say 5s. He knows that the English par for a franc is 9½d. ; the money changer offers to change his silver at 10d. per franc ; this appears a better rate than 9½d. If the sailor had francs to sell and wanted pence, he would get more pence at 10d. per franc on five francs than he would at 9½d. per franc. But he has five shillings for sale, and the rate must be used as a divisor of the 60 pence in five shillings, and the sailor gets six francs. If he had been offered 9½d. per franc he would have received 6 francs 31 centimes, or 5 per cent. more. Sixty pence divided by 9½ pence gives 6·31 francs. The common-sense manner of quoting and working the exchanges in France is centimes or francs for the money to be exchanged. By this system a quotation would never have to be used as a divisor, and the worse would never appear the better rate.

As an instance of the working fixed pars between countries possessing the same weight as their measures of value in the manner in which they are at present worked, the following is a comprehensive example.

Should the monetary system which has the franc, or 4·480359 troy grains of pure gold, become scientific and automatic, on this weight, 128,000,000 would have the same gold standard, under the term franc (France, Belgium, Switzerland), lire (Italy), peseta (Spain), drachma (Greece), lev (Bulgaria), leo (Roumania), dinar (Servia), bolivar (Venezuela), peso (Argentina) of five francs, sol (Peru) of five francs, milreis 5 (Portugal) or 28 francs. Assume that these 13 countries have effective gold monetary systems. In an arbitration of exchange to determine whether such a rate would be better to the remitter than a direct rate, the direct rate being in Paris upon Buenos Ayres $\frac{1}{4}$ per cent. premium, at the following rates for sight bills attached to the cities mentioned the sum would be as follows:—It is evident that the weight to be dealt with is 4·480359 grains pure gold, and that the direct exchange on Buenos Ayres would be 4·480359 grains of gold, less $\frac{1}{4}$ multiplied by five, or 22·345795 troy grains of pure gold, the peso being 22·401795 troy grains of pure gold.

Let X represent 4·480359 troy grains of pure gold.

France X + $\frac{1}{4}$ % = Spain X.
Spain X — $\frac{3}{8}$ % = Italy X.
Italy X — $\frac{7}{8}$ % = Greece X.
Greece X + 1 % = Servia X.
Servia X + $\frac{1}{4}$ % = Belgium X.
Belgium X + $\frac{1}{2}$ % = Bulgaria X.
Bulgaria X — $\frac{5}{8}$ % = Roumania X.
Roumania X + $\frac{7}{8}$ % = Portugal X. 28 francs = 5 milreis.
Portugal X — $\frac{1}{2}$ % = Peru X. 5 francs = 1 sol.
Peru X + $\frac{1}{4}$ % = Argentina X. 5 francs = 1 peso.

Premiums and discounts on 4·480359 troy grains of gold.

Premiums.	Discounts.
$2\frac{7}{8}$ %	$2\frac{5}{8}$ %
$2\frac{5}{8}$ %	
$\frac{1}{4}$ %	

This shows that the arbitrated rate is no better than the direct rate. Both show that the weight of gold commanded in Argentina is about a quarter per cent. less than par. The comparison of the percentage rate does not exactly equal the working by the rate. A quarter per cent. upon the par rate is ·0112 of a grain. The same rate on the 4·491559 grains paid for the fifth of a peso in Paris would make the weight 0·11225 of a grain. The difference between ·1288 and ·1176 is ·0112, and this upon 4·491559 grains is ·2493 per cent., and is ·0007 less than $\frac{1}{4}$ per cent.

Absolute Pars.

These are determined by the gold price of silver of the day in gold standard systems and by the silver price of gold of the day in silver standard systems, by which the ratio of the day between the metals is found. You see that to assist to determine the ratio between gold and silver a table is presented. Two items of information on this are the weights by which silver is sold in gold standard countries and the weights by which gold is sold in silver standard countries, and the second is a list of constants. The constants in gold standard countries are to be divided by the price of silver, and the constants in silver standard countries are to be used as divisors of the price of gold.

Name.	G., grains Gold. S. „ Silver.		Sign.	Ratio.	G., grains Gold. S. „ Silver.	Name.	G., grains Gold. S. „ Silver.		Sign.
Britain..G.	12·293	26·108	D.	30	S. 368·790	For Japan ...S.	374·4		Yen.
Japan ...S.	3457·848	9·235	Y.	30	G. 115·262	„ Britain..G.	113·001605		£

In these two instances, as in those under fixed pars of exchange, the premium and discount upon par are self-evident looked at through the weight and ratio between the metals. The essential difference between the writer's method and that of the cambist's books of instruction, such as Tate's in English and Haupt's in French, for working the world's exchanges, is that signs are done away with and the work is done by the pure metal indicated. Deviations from par are worked by means of premium or discount on the rate or the amount to be exchanged in the country originating the operation. They work with signs, and have no rule about taking the deviation from par. Sometimes it is in the lecturer's way, and sometimes the chief money of account of this country for more or less than the equivalent weight in the money of the system into which the exchange is made.

The English quotations of exchanges upon France, Italy, Belgium, Switzerland, Greece, Scandinavia, Germany, Holland, and Austria, are one pound (£1) for more or less than the equivalent of a pound in the money of each country. Upon the whole of the East, excepting the Dutch possessions, and the whole of North and South America, the English rate is more or less pence for each country's whole money of account.

Mr. Ellis, the late respected Editor of the *Banker's Magazine*, and the recent writer, until his death, of the *Times* City article, introduced long-needed changes in the quotations of the exchanges in that paper. The exchanges, stripped of monetary signs and worked by weights only on the system advocated by the writer, would be quoted at so much premium or discount upon fixed par between countries possessing the same standard substance, and so much premium or discount upon absolute par on a given ratio between the metals for exchanges between countries possessing different standard substances.

The following would be the form of quotations in the British Isles.*

Perhaps, if ever, it will be many years before such a system as this will be in common use in each country and of general interest in the daily papers. However, that may be, all minds that are brought to the consideration of money should realise the absolute importance of the mint issue weight of pure metal, gold or silver, in each country's chief money of account. These weights should be stamped upon the minds of the commercial and banking world. The only absolutely accurate manner of working the exchanges is by weight.

Take an example by simple weights in comparison with the cambist's method of reaching the par of exchange between England and France. The writer's method is to divide the mint issue weight of pure gold in the sovereign by the mint issue weight of the pure gold in the franc, and the result is the answer—

$$113{\cdot}001605 \div 4{\cdot}480359 = 25{\cdot}22{\cdot}155$$

The division of the weight of the pure gold in the sovereign by the weight of pure gold in the franc gives the French monetary sign for the weight of gold in the sovereign—25 francs 22·155 centimes.

CAMBIST'S METHOD.

Mint Par.

? = £1
£1,869 = 480 ounces troy $\frac{11}{12}$ standard
oz. st. 1 = 31·10349552 grams $\frac{11}{12}$ fine
grams st. 12 = 11 grams fine
grams fine 900 = 1,000 grams French coin
grams 1,000 = 3,100 francs

Ans. Fr.$25{\cdot}22\frac{3}{20}$

If the simplicity of the shorter method can be extended to the whole range of the exchanges, what is to hinder its universal adoption? It appears to the lecturer to be a mere matter of education. The world at present may be said to be pretty well on the same level of ignorance of and indifference to the subject. There has been talk enough over prices and Bimetallism; it is high time to get to the foundations of money and thrash out the science of it, if it has any. There is no aim to introduce a novel system of working the exchanges. The great object is to unveil them. Among 128,000,000 of people using the gold franc or its basis as their chief measure of value, the exchanges are worked precisely as it is advocated that they should be worked throughout the world wherever a people's currency is based upon a gold or a silver

* Table II. (see page 32).

standard. The currency of the British Empire, with the exception of British India, Burma, Ceylon, Canada, and a few small islands, consists of a weight of 113·001605 troy grains of pure gold. A problem of arbitrated rate of exchange starting in Britain, through Jamaica, British Guiana, terminating in Australasia, would be quoted in the same manner as between France, Belgium, and other countries using 4·4080359 troy grains of gold as their chief measure of value. It would be as follows, the fluctuations more or less than par in the country dealing with the operation: X represents 113·001605 troy grains of pure gold. Then

Britain ... X — 1 % = Jamaica X.
Jamaica ... X + ¾ % = British Guiana X.
British Guiana X + 1 % = Africa X.
Africa ... X + 3 % = Australasia X.
Premiums, 4¾ per cent.; Discounts, 1 per cent.

One per cent. from 113·001605 leaves 111·87159; 3¾ per cent. on this brings the amount paid to 116·06677 troy grains of pure gold. If Britain could command 113·001605 troy grains in Australasia by a direct exchange by the payment of 111·87159 troy grains of gold, the indirect rate is worse by 3¾ per cent. on 111·87159 troy grains of pure gold.

Quotations of the exchanges made in weights or monetary or currency signs, always resolve themselves into deviations from par, more or less in percentage form. In a quotation wherein a coinage charge, a counter-charge, a transmission of metal charge, or a commission charge, form a part, the rate scientifically used would be at a premium in the country originating the transaction. The rate for an inferior bill of exchange compared with that for a superior bill would be at a discount. The rate for a bill at longer usance than sight compared with one at sight would be at a discount determined by the interest charged by the buyer from the seller of the bill for the use of the money. From this it will be readily seen that there may be discounts to be set against premiums, in arriving at the percentage, more or less upon the fixed or absolute par of exchange.

The following is a problem in the exchanges to determine whether a direct rate of exchange in London on Paris is better than an arbitrated rate of exchange through three silver standard and three gold standard countries. This and the following problems were stated before the projected alteration of Chili's gold standard weight by a reduction of weight, which brings the ratio between gold and silver in that country to more than 40 parts of silver to 1 part of gold.

London on Paris through Russia, India, China, Japan, Chili, and the United States of North America, at the ratio 32·55 parts of silver to 1 part of gold.

Such an indirect or circuitous arbitration is scarcely likely, but

we can assume it, and it might be practised in the future. It embraces all the present six monetary and currency systems of the world. Assume that these systems are at par on the ratio stated. Then we have (g.g. for grains of gold., g.s. for grains of silver) British £, or 113·001605 troy grains of pure gold for Russian roubles 6·3059 or 113· odd g.g.; Russian roubles 6·3059 or 113 g.g. for 22·2921 British India rupees or 3678·20 g.s. or 113 g.g.; British India rupees 22·2921 or 3678·20 g.s. or 113· g.g. for 7·1689 China taels or 3678·20 g.s. or 113 g.g.; China taels 7·1689 or 3678·20 g.s. or 113 g.g. for Japanese yens 9·8242 or 3678·20 g.s. or 113 g.g.; Japanese yens 9·8242 or 3678·20 g.s. or 113 g.g. for Chilian pesos 5·3356 or 113 g.g.; Chilian pesos 5·3356 or 113 g.g. for 4 866 U.S.A. dollars or 113 g.g.; U.S.A. dollars 4·866 or 113 g.g. for French francs 25·22155 or 113 g.g.

At these rates the circuitous course would be the same as the direct rate in London on Paris; the fixed par between these cities being 25·22155 francs for one sovereign.

Take the deviations from par at the present time.

London on Russia at a discount equal to a paper premium on gold in Russia of 47·62 per cent., with ½ per cent. discount on the London rate; Russia at 47·62 per cent. premium in currency and discount 2 per cent. on the Russian rate on British India, with 20 per cent. added on the metal par of that country; British India with 20 per cent. added for currency par, and 1¼ per cent. deducted for variation in exchange upon China; China with 2 per cent. deducted on Chili at 221·32 per cent. premium; Chili with 221·32 per cent. premium and with 1½ premium on currency par on the United States; the United States ¼ per cent. premium on France. Let X stand for 113·001605 troy grains of pure gold.

London X — ½ % = Russia X + 47·62.
Russia X + 47·62 % — 2 % = India X + 20 %.
India X + 20 % — 1¼ % = China X.
China X — 2 % = Chili X + 221·32 %.
Chili X + 221·32 % + 1½ % = United States X.
United States X + ¼ % = France X.

We do not take notice of percentage deviations from par due to currency premiums on metal, because in this instance the same figures appear on both sides of the account.

Discounts	...	...	5¾ %
Premiums	...	...	1¾ %
Discount	...	...	4 %

The excess discount 4·52 grains of gold upon 112·4366 grains of gold spent in London shows a gain to the remitter of 4·02 per cent. You will notice in this problem that all percentage deviations

from par are taken by premium or discount in the country operating upon another country. London gives ½ % less than par for par in Russia, but if London gave par for par with an equivalent premium to ½ % discount in Russia, and if Chili gave par for par with an equivalent discount to 1½ % premium, the result of the operation would be the same. The lecturer has dealt at some length in his book of 1892, "The World's Exchanges of Standard Metals," with the present unscientific mode of working the world's exchanges excepting between countries which possess the same weight as their measure of value, and has there met the objections that have been raised to any change. The exchanges between Britain and Russia and between Russia and Britain are quoted and worked scientifically. The rate in Britain is a variable weight or sign in pence for a rouble. The rate in Russia is a variable weight or sign in roubles for £10. It will be interesting to compare the *Times* weekly quotations of exchanges under the head of "Course of Exchange" with the quotations introduced into that paper by the late Mr. Ellis.

COURSE OF EXCHANGE.

	Past.		Present.	
Amsterdam and Rotterdam	12·0⅛	to 12·1½	12·2	to 12·3
3 M/S	12·2¼	„ 14·4⅛	12·3¼	„ 12·3¾
Antwerp and Brussels, 3 M/S ...	25·46¼	„ 25·51¼	25·36¼	„ 25·41¼
			Hamburg 20·57	„ 20·61
Berlin and German Bank places ...	20·56	„ 20·60	20·58	„ 20·62
Paris Cheques	25·23¾	„ 25·28¼	25·22½	„ 25·27½
3 M/S	25·46¼	„ 25·51¼	25·35	„ 25·40
Marseilles „	„	„	„	„
Antwerp „	11·83¾	„ 11·88¾	Austria 12·36¼	„ 12·38¾
St. Petersburg „	26 1/16	„ 26 3/16	25 7/16	„ 25 9/16
Moscow „	26	„ 26⅛	25⅜	„ 25½
Genoa „	25·86¼	„ 25·91¼	26·75	„ 26·85
Leghorn „	„	„	„	„
Naples „	„	„	„	„
Barcelona „	44½	„ 44⅝		
Cadiz „	„	„		
Madrid „	„	„	41⅞	„ 42
Seville „	„	„		
Malaga „	„	„		
Valencia „	„	„		
Valladolid „	„	„		
Santander „	„	„		
Bilboa „	„	„		
Lisbon „	47	„ 47⅛	41	„ 41¼
Oporto „	Gold nominal		41	„ 41¼
Copenhagen „	18·35	to 18·39	18·31	„ 18·35
Christiania „	18·36	„ 18·40	18·32	„ 18·36
Stockholm „	„	„	„	„

At present the commercial world, through the columns of the *Times*, gets twenty quotations of exchanges weekly under the "Course of Exchange," against twenty-seven quotations which were accepted as necessary in past times. Reflective people would probably ask, Where they ever necessary, and if not, what could have been the motive for the appearance of them? They certainly occupied space for years in a leading daily journal which might or might not have been paid for.

The following is a description of the lecturer's guide to sailors and travellers for ascertaining the world's 438 fixed and 432 absolute monetary pars of exchange.

Norman's Sailor's and Traveller's Guide to the World's 438 *Fixed and* 432 *Absolute Monetary Pars of Exchange.*

There are eight tables in this Guide. These tables are really tools which are necessary for facilitating the working of the foreign and colonial exchanges. The first table contains the weight of pure gold in troy grains in the world's 18 present and projected chief gold moneys of account, such as the pound, the franc, the dollar; the pure silver in 11 chief silver moneys of account, and the trade dollar. Also the weight of pure gold and pure silver indicated by small token signs, such as a penny, a shilling, a cent, a pice (1). The second table contains the second tool. This comprises the gross weight and weight of pure gold in troy grains in 21 current gold coins, and the gross and pure weight of silver in 25 current silver coins (2). The third table contains two tools. Norman's unit of weight system (3). This consists of the monetary signs for a gram, and a troy grain of pure gold and pure silver in 18 gold monetary systems, and in 12 silver monetary systems. This table also contains tool 4. Attached to each of the 30 systems are constants for the purpose of ascertaining the daily fluctuating ratio between gold and silver. The constant attached to each gold system being divided by the price of silver in each system gives the ratio of silver to 1 of gold. The constant attached to each silver monetary system being used as a divisor of the silver price of gold, gives the ratio between the two metals (4). The fourth table contains the fifth tool. This is 306 fixed gold pars of exchange between the 18 gold monetary systems based on the mint issue weight of pure gold in each of the 18 gold standard moneys of account. These fixed pars are simply different monetary signs for the same weight of pure gold, and are obtained by dividing the pure gold in one chief gold money of account by the pure gold in another chief money of account. These figures thus reached are absolutely correct so long as the mint issue weight of pure metal in each chief money of account is accurate (5). The fifth table contains the sixth tool. This is 132 fixed silver pars of exchange which are reached in the

same simple manner as the fixed pars between the gold monetary system (6). The sixth table contains the seventh tool. This consists in 180 fixed gold pars of exchange, with 10 chief silver standard moneys of account at the ratio of 1 part of gold to 1 part of silver. The division of the figures under the head of each gold monetary system by the ratio of the day between the metals gives the absolute gold price of the weight of silver in each of the 9 silver monetary systems and the trade dollar (7). The seventh table contains the eighth tool. This is 180 fixed pars of exchange between silver and gold standard monetary systems at the ratio of 1 part of silver to 1 part of gold. The multiplication of the figures under the heads of the 10 silver monetary systems by the ratio of the day between the metals gives the absolute silver price of each of the eighteen chief gold moneys of account (8). The eighth table presents the ninth tool. This is the world's monetary and currency systems in 1894. It is the statement of 36 countries, where internal and international prices are governed by gold, paper currency being at par; 15 countries where international prices are governed by silver; 9 countries where currency consists of silver-cum-counter charge—*i.e.*, premium on silver by Government enactment; 21 countries where currency consists of inconvertible paper. These 81 countries contain 1,165,500,000 people. Intimation is given where the standard substance is unfettered and unfavoured, where there is a coinage charge, and where the distributive side of bimetallism is practised (9). The ninth table presents the tenth tool. This contains directions for ascertaining what is meant by newspaper quotations of rates of exchange (10). The letterpress accompanying the tables conveys instruction how to use these nine tools. The writer may be permitted to make the following quotation from his Guide:—

"It cannot be too strongly impressed upon each student of these tables, and the tables of weights of pure metal indicated by each chief money of account, that he who has to exchange money should approach the money-changer with the knowledge of the fixed par of exchange between metals of the same quality and the absolute par of exchange of the day between gold and silver, as he may have to exchange one metal for the same metal, or one metal for a different metal. A current rate of exchange is hardly ever at a fixed par, and as rarely at an absolute par. The money-changer must have his fair profit for the accommodation which he affords to him who desires to exchange money. What this profit should be competition between money-changers can alone determine If foreign coins are not retained for use in the country in which they are sold, there would be a charge for conveying them back to the country which issued them. This charge would vary from one-fourth to seven-eighths of 1 per cent. between the nearest and most distant ports.

"Let not any sailor or traveller say 'If I cannot know exactly

what I ought to get in exchange for my money from the money-changer, I am not going to trouble myself to know only approximately what I ought to get.' Is it not best to approach the money-changer with the knowledge that weight for weight of gold, weight for weight of silver, weight of silver for gold, weight of gold for silver, such are fixed and absolute pars, and then to judge by the money-changer's quotation, guided by the experience you may have gained, whether the difference is a fair one or not?

"The method pursued in these tables, giving monetary signs for fixed pars of exchange between the world's chief moneys of account, and taking any deviation from par by means of premium or discount, is a short cut to the same results as are given in detail in Tate's and O. Haupt's Cambists by the lengthy means of a chain-rule sum."

The monetary and currency exchanges of the world are worked, and will continue to be worked, by signs. This Guide exhaustively exposes them, and the manner of stripping them off to disclose the weight of metal indicated by them. Will not the time come when, at least for statistical purposes, prices in countries possessing scientific automatic monetary systems, will be given in weights of pure metal? It would not be valuable for statistical purposes in any other currency system. It would have to be accompanied by the knowledge of the coinage or counter-charge, and whether the price is a metal or paper price. If the comparison be made with a country burdened by customs' tariffs, prices in bond only could be taken.

The kilogramme and its parts are weights in more common use than any other system of weights, but it would not be so well adapted for statistical purposes as the British troy weight, because the gram is too large, being 15·432348 times heavier than the troy grain. The lowest price used in this country is the $\frac{1}{64}$ part of a penny; the gold weight represented by this is ·0004766 of a gram or ·007356 of a grain. One penny represents a gold weight ·03051 of a gram or ·47084 of a grain. Dr. Ad. Soëtbeer's opinion was that all coins should bear upon them their mint issue weight in grams.

So far prices and monetary and currency exchanges have been treated in an elementary manner and at their roots.

The endeavour has been to show by the action and interaction of prices and rates of exchange—

I. That the basis of all prices and of the foreign and colonial monetary and currency exchanges on the sea-board of countries in the comity of trading nations is a weight of pure gold or a weight of pure silver.

II. That prices on the sea-boards of countries in the comity of trading nations consist of:—1. Pure gold prices. 2. Pure silver prices. 3 Gold-cum-coinage charge prices. 4. Silver-cum-coinage charge prices. 5. Silver-cum-counter-charge prices. 6. Inconvertible paper prices. 7. Either gold or silver at the option of the payer prices.

III. That at present there are six different rates of exchange in the world, and embrace the same factors as are contained in prices with others, such as transport, interest, and commission charges.

IV. That the simple and easy way of arriving at a full understanding of money is to strip it of all monetary signs and to look at it and speak of it as either pure gold or pure silver. *A weight of pure gold or pure silver.*

V. All properties, interest-bearing securities, all produce, manufactures—in fact, everything of value which leaves the shore of one country is as good as weighed out against the standard substance of the country, that is either gold or silver, or measured out against the currency on the sea-board of that country before leaving it, and is treated in the same manner on reaching the country to which it is sent.

VI. That the prices of all interchanges between communities are subject to variation dependent upon an alteration of ratio between gold and silver or an alteration in the paper price of metal in countries where the currency is inconvertible paper.

VII. That the analysis of the foreign and colonial exchanges is as simple and as easy to be understood as that of prices by means of weights of pure gold and silver, the ratio, and deviations from par by percentage, premium, or discount.

VIII. That in the interest of the world the daily ratio between gold and silver should be a prominent feature under the head of financial and commercial news in the daily press.

IX. That the whole exchanges of the world should be worked as they are at present worked between countries using the same metal and the same weight of it as their standard and measure of value; and that is by premium or discount upon the sum to be exchanged for the currency of another country.

X. That prices and monetary exchanges should be first learnt by means of familiarity with weights of gold and silver, the ratio, and the deviation from par by means of premium or discount on the weight of the money of the country wherein the transaction is originated, and afterwards studied through the means of monetary and currency signs.

We have now gone through the elements of prices and monetary exchanges, and the subject cannot be left without mention of the excellent work done by Miss Emily Crumys Sharland in connection with the subject of money. This lady is a lucid and most instructive writer for children, and some years ago at the instance of the lecturer took up the subject of money and wrote upon it in a series of communications which appeared in the children's column of the "Co-operative News." Under the title of "Coin of the Realm: What is it?" her contributions to this paper were published in 1888. In this work she explains to the comprehension of children

the processes of mining gold and silver, the construction of coins, and the use of Norman's unit of weight system. She taught children how to make their purchases and send their accounts to their elders in grains of pure gold in the British Isles. She asked fifteen questions, embracing profit and loss upon international interchanges of piece goods for wheat measured in grains of pure gold and pure silver, and gave prizes for the best answers. These answers were astonishing, and drew from the keeper of the British standards highly commendatory remarks. The ages of the successful competitors ranged from 12 to 13½ years, and the youngest took the first prize. The development of the subject since 1888 now necessitates questions upon prices in countries possessing currency systems which would require the resolving of them into their constituent parts, namely—metal, coinage, counter, and paper.

Prices and Monetary and Currency Exchanges between 1873 and June, 1893.

It is not the intention of the lecturer to deal with details. He accepts facts for the purpose of showing the working of principles. The period taken is the closure of the mints of the Latin Union and the U.S.A. against the reception of silver from the public to the destruction of the standard of silver in British India in June, 1893.

Facts.

I. A great fall of prices of products of the field, the mine, and the factory, of many classes of property, including a measurable decline in the prices of silver interest-bearing securities, but no fall of prices of gold interest-bearing securities in countries possessing effective gold monetary systems.

II. Comparative stationary prices on the sea-board of countries possessing silver as the basis of their currency, and of countries possessing inconvertible paper as their currency. No change of prices of silver interest-bearing securities, and a great rise of prices of gold interest-bearing securities.

III. The gold price of silver has fallen 50 per cent. and the silver price of gold has risen 96 per cent.

The late Mr. Bagehot taught, and his teaching was accepted as an axiom until experience overthrew it, that in the event of a fall in the price of silver in gold standard countries there would be a rise of general prices in silver standard countries. The Royal Gold and Silver Commission Report of 1889, the testimony of British Consuls in silver standard countries, and of others of competent judgment, confirm the fact that Mr. Bagehot's prognostications have not been realised. If the question be asked,

How is it that such a high authority made a false prediction? it may be, perhaps with truth, replied that he failed to comprehend the difference between the British monetary system and the currency systems of the countries he was thinking of. Experience has shown that it is difficult to get the mind of one who is not accustomed to international interchanges of something for something, and monetary and currency interchanges, to pierce through prices and monetary and currency exchanges, and to see the result of the working of both in an inevitable manner. There may be monetary and currency international interchanges without the international interchange of some other thing for some other thing. But there cannot be an international interchange of one thing for another thing without an international monetary or currency interchange at the same time time affecting the prices of the things.

Two illustrations may be given of the working of prices in combination with monetary and currency exchanges :—I. Silver interest-bearing securities. Why have silver interest-bearing securities fallen 40 per cent. in price in gold standard countries? It is not through failure of credit. The prices are as high in the silver standard country as they were before the great rise in the silver price of gold. Some of them are considered capital investments in gold standard countries. Why, then, have they fallen 40 per cent. in gold standard countries? There is only one answer. It is because of the rise in the silver price of gold through the exchange of silver for gold, which is necessary in the operation. Let us trace it through. Say that the price of Enfaced British India Rupee Paper in 1873 was 1,040 rupees for 1,000 rupees, and that the exchange with the British Isles was then one rupee or 165 troy grains of pure silver for 1s. 11d., or 10·83 troy grains of pure gold, the price of Rs.1,000 of Rupee Paper would therefore be £996·73, or 112,632 troy grains of pure gold. In 1893 say that the price in British India was the same, and the rate of exchange a rupee for 1s. 2d. or 6·59 troy grains of pure gold, the price of Rs.1,000 of Rupee Paper would therefore be £606·50, or 685,360 troy grains of pure gold. The reason why the Rs.1,000 Enfaced British Indian Paper was sold in 1893 for no greater percentage profit in Britain than in 1873 is because it could be sold both in 1873 and 1893 without loss to the importer on both occasions, and the reason why the percentage profit on the import on both occasions would have been about the same is the competition among sellers to secure the profit which upon each occasion the operation might yield. There cannot be an objection raised to the truthful description of the effect of a higher silver price of gold upon silver interest-bearing securities among importers or exporters of such property, or among those who know anything of the operation of monetary and currency exchanges.

Now if this change of price in the British Isles of necessity takes place in silver interest-bearing securities, and is simply and entirely

due to stationary prices in the country exporting the security and the higher silver price of gold, how can it be consistently asserted that prices of the products of the field, the mine, and the factory, are exempt from monetary and currency exchanges affecting them in a similar manner.

Ratio.

It is not necessary to draw out an analogous case to the foregoing one to illustrate the effect of the rise in the premium upon gold or silver in a country possessing one or other of these metals as its standard, but the currency in which consists of inconvertible paper. But what I would desire to emphasise here is the alteration of the ratio between gold and silver, which is the sole cause of change of price in the case instanced, differs widely from the rise or fall of premium in paper upon the standard metal of one country. The one is world-wide in its action, the other is of limited operation, Both may spring from the speculative instincts of mankind manifesting itself in tampering with the currency in the interests of the few against the interests of the many.

That it may be clearly seen, and the lecturer would hope deeply impressed upon his audience, and upon all into whose hands his writings may fall, that the cause of the fall in the gold price of British Indian Enfaced silver interest-bearing Rupee Paper operates precisely in the same way upon the products of the field, the mine, and the factory. An effort will be made to show more clearly, if possible, than is shown in the instance of a pound of tea on pages 305 and 6 of "The World's Exchanges of Standard Substances" the indisputable truth of this statement. It is not necessary to present a concrete case particularising one substance of commerce. All we have to do with is the ratio between gold and silver. You have learned from the attention which you have kindly given to the lecturer that the simplest manner of understanding money is to strip it of monetary signs. Say, therefore, that a substance of commerce, the product of the field, or mine, or factory costs 30,000 grains of silver in an effective silver standard country, and is sent to a country possessing an effective gold standard currency. The price at which that substance can be sold in the gold standard country so as not to leave a loss to the party who sent it, must depend upon the ratio between the metals. If the ratio is $15\frac{1}{2}$ parts of silver to 1 part of gold, then 30,000 divided by $15\frac{1}{2}$ shows that it must sell for 1,935·5 grains of gold. At another time the same substance is bought for the same price with 30,000 grains of silver, and the ratio is 30 parts of silver to 1 part of gold. This shows that unless the shipper gets 1,000 grains of gold he will not get back the equivalent of his cost. That the shipper on the second transaction does not get more than his ordinary profit is due to the competition he is subject to in the effort to get even a small profit.

It is not enough to look simply at the action of an altered ratio between gold and silver upon the import trade of a gold-standard country. This altered ratio tells equally upon the gold-standard country's exports to a silver-standard country or countries possessing other descriptions of currency. In exchange for products and properties received, products and properties, including, if necessary, gold and silver, must be returned. If general prices will not rise in countries possessing other than effective gold currencies, in proportion to the alteration of the ratio, prices must proportionably fall in gold-standard countries. There is no other law than this all the time that prices and monetary and currency exchanges affect the interchanges of products and properties between man and man and community and community. It appears absolutely certain that the adjustment must take place in one or other of three ways between countries possessing effective monetary systems. I.—A rise of price equivalent to the rise in the silver price of gold. II.—A fall in price equivalent to the fall in the gold price of silver. III.—A rise of price in the silver-standard country and a fall of price in the gold-standard country to meet the altered ratio between gold and silver.

Gentlemen, I pause here. You grasp this truth. It is no more than is known by every trader and exchange expert who has had anything to do with business—it may not be said all down the ages —but most assuredly since 1873. Since you have grasped this truth, and should you have a firm hold upon the science of money at the same time, you must attain to a partial conception of the tremendous dilemma the world is in through the state of its currencies. The lecturer grieves that this truth about the ratio, was ignored by the Royal Gold and Silver Commission of 1886–89, and denied in the opinion of one of its members. The dilemma the world is in is not to be met by concealing any portion of truth. If this lecture draws attention to the operation of ratio upon prices, it may lift into a prominence due to it a subject so little generally understood. It is quite beyond the scope of this present lecture to enlarge upon this subject. You cannot, however, from what has been said, fail to see that the action of inconvertible paper currency prices, and inconvertible paper exchanges would so affect international interchanges of products and properties between countries using them and countries possessing effective metal monetary systems, that prices in the latter-named countries might be largely influenced thereby. Your attention has been drawn to the importance of intending emigrants having some knowledge of the coins of the country they are going to before starting for it. Of equal importance is it for them and for traders whose object it is to return to their native land, that they should know all about the money and currency of the country for which they are bound. What merchant or trader who left a gold-standard country for a

silver-standard country with pecuniary means to seek his fortune in commerce in 1870, had the least apprehension that to transfer his property back to his own land in 1895 he might lose upon it at the rate of one-half on the amount he took out with him, simply and solely through the altered ratio between gold and silver ?

The lecturer is charged with having been somewhat severe upon those who do not altogether agree with him. He is heartily sorry if he has injured any one's feelings. He is conscious that it is with much more justice that he should be sevenfold more severe upon himself. It is more than twenty years since he published his "Unit of Weight System," and it was only on the 11th March, 1895, that he perceived that the Abrahamic method of weighment of money, and getting rid of monetary and currency signs, presents the clearest and simplest mode of instruction upon prices and monetary and currency exchanges. When he asks himself the question why there has been twenty years' delay between the discovery of his unit of weight system and his latest progression, he can attribute it chiefly to his own dull perception. If this lecture should secure the serious attention of the world and prove to be beyond the reach of adverse criticism, and, moreover, should it be accepted as the sound basis for universal instruction upon the subject of money, it ought to be put into practice at once, irrespective of diverse views of metallism for money. Whether the lecturer's views of the mode in which all the monetary and currency exchanges of the world should be quoted and worked be right or wrong, practicable or impracticable, does not affect the question of the paramount importance of instruction to the youth of countries, especially of this country, in the more advanced classes in all schools.

TABLE III. (see page 28).

No one can look at this table without being struck with the wretched conditions of the currencies of the world among 1,164,571,000 of its inhabitants. The descent from a scientific automatic monetary system to dressed up old rags as the only intermediary in interchanges between man and man, and community and community, is a striking and painful one. It should by this time be burnt into the mind that money is a measure of value, an equivalent in value to that for which it exchanges. And that as a commodity it must be unfettered and unfavoured, or it cannot be money. If one reflects that the primary object of an intermediary in the exchanges of things for things or services is for the settlement of the internal interchanges of a country upon as invariable a basis of price as possible so far as that depends upon a measure of value, how far removed from such a desirable object does the bulk of mankind appear to be ! The thoughts of the men who enter into the controversy upon metallism for money are occupied

with international interchanges and for the sake of what they think may benefit these. It is difficult to see that this secondary object is entitled to supplant the first. The observance of a natural order would seem to be the sounder and juster course.

Conclusion.

Permit me to return to you my most hearty thanks, Mr. Chairman, for your kindness in taking the chair upon this occasion. It is indeed an honour that a gentleman so well known for unselfishness, noble-minded disinterestedness, and unfailing attention of such high order to the laborious work of the London School Board should be here must evoke the heartiest thanks of all present. May this meeting be the inauguration of an era of light and truth upon this, one of the most important of mundane subjects—Money; its constitution, functions, and powers. Prominent educationalists have expressed the opinion that the instruction upon the science of money, and the practice with it in prices and monetary exchanges should undoubtedly be made a branch of the Art and Science Department of all State instruction. We should all agree in this doubtless; for among the highest and most important of the Arts is that of coinage, and one of the most important of the sciences is that of money. Events are of daily occurrence in connection with metallism, for money, which all thoughtful persons are sanguine in believing, must lead up to the production of a science primer of money which the world must accept and teach as truth. It is with the profound conviction that "a masterly skill in bullion and coin" cannot fail to issue in the science of money that the lecturer has occupied your time and attention with this afternoon. But the different moneys and currencies of the world would impart a new and delightful stimulus to the acquirement of geography, and might be made of interest to all children in connection with different countries prices, and thus out of all schools they would grow up with a knowledge of money *in its weight* and monetary and currency signs.

TABLE III. (see page 28).

TABLE III.

The Monetary and Currency Systems of the World in 1894 among 1,164,571,000 People.

A attached denotes that the standard substance is unfettered and unfavoured. *B* that both gold and silver are unlimited legal tender. *C* that there is a coinage charge. *G* stands for gold, *S* for silver. Since 1873 no country in the Western world which aspires to local dual standards has had its mints open to the unlimited coinage of silver.

Countries where Internal and International Prices are governed by Gold, Paper Currency being at par.—Australasia C, British Isles A, British West Indies A, British Guiana A, British South Africa A, British Basutoland A, Bechuanaland A, Bermuda A, Belgium BC, Bulgaria, Canada, A, Cape of Good Hope A, Channel Islands A, and Egypt, France BC, Finland B, Falkland Isles A, Germany C, Gambia A, Haiti B, Isle of Man A, Liberia A, Lagos A, Natal A, Netherlands C, Newfoundland A, Niger Coast Protectorate A, Royal Niger Co. A, Scandinavia C, Switzerland BC, Turkey C, United States B, Uruguay and Venezuela BC, Zululand A: Thirty-six countries, 254 and a quarter millions of people.

Countries where International Prices are governed by Silver.—Borneo A, British Honduras A, China A, Cochin China, Cambodia, Hong-Kong A, Japan C, Mexico C, Madagascar A, Philippines, Persia C, Siam C, Singapore, &c., A, The Islands of the Pacific A, Tonquin: Fifteen countries, 400 millions of people.

Countries where Currency consists of Silver-cum-counter-charge, i.e., premium on Silver by Government enactment.—Andaman Isles, British India, Burma, Ceylon, Imperial British East Africa Co.'s (Limited) Territories, Java and Dutch East Indies, Mauritius, Imperial German East Africa, Portuguese Possessions in India: Nine countries, 226¼ millions of people.

Countries where Currency consists of Inconvertible Paper (G stands for Gold, S for Silver).—Argentina GBC, Austria-Hungary GC, Bolivia SC, Brazil GC, Chili GBC, Cuba GB, Columbia SC, Costa Rica SC, Ecuador SC, Greece BC, Guatemala SC, Honduras SC, Italy BC, Nicaragua SC, Peru SC, Paraguay GC, Portugal GC, Russia CG, Servia G, Spain BC, Salvador SC, Roumania : Twenty-one countries, 245 millions of people.

TABLES.

TABLE I.

Col. I.—Weights of pure gold and pure silver in the world's chief moneys of account on issue from the Mints. Col. II.—The monetary sign for 1 troy grain of the standard substance of each present monetary or currency system. Col. III.—Weight in troy grains by which silver is sold in gold standard systems and by which gold is sold in silver standard systems. Col. IV.—Constants in gold standard countries which, if divided by the price of silver of the day, gives the ratio between gold and silver, and constants in s lver standard countries which, if used as divisors of the price of gold of the day, gives the ratio between gold and silver.

GOLD.

SYSTEM.	Chief Money of Account.	Col. I. Troy Grains.	Col. II. Monetary Sign for 1 Troy Grain.	Col. III. Troy Grains.	Col. IV. Constants.
I.—Egyptian	Pound	114·778006	8·712464 ochr el guerches	571·9737	498·33 piastres.
II.—British	,, ...	113·001605	2·123863 pence	444·	942·9954 pence.
III.—Turkish	,, ...	102·079887	39·184800 paras	4,942·35	4,841·6249 piastres.
IV.—Persian...	Toman	52·964281	3·776013 shahis	142·17	26·8426 krans.
V.—Portuguese	Milreis ...	25·088524	39·858849 reis	15,432·348	615·1158 milreis.
VI.—Uruguayan	Peso	24·015034	4·164058 centesimos ...	15,432·348	640·614 pesos.
VII.—Newfoundland	Dollar	23·542008	4·247727 cents	480·	2,038·9084 cents.
VIII.—United States, N.A. ..	,, ...	23·220000	4·306632 ,, ...	480·	2,067·1834 ,,
IX.—Argentine	Peso	24·491743	4·463930 centesimos ...	15,432·348	688·8889 pesos.
X.—Cuban	,, ...	21·501900	4·650700 cents	15,432·348	717·7204 ,,
XI.—Chilian	,, ...	21·180900	4·720306 centavos	15,432·348	—
XII.—Russian	Rouble ...	17·919736	5·580439 copecks	6,319·	367·4056 copecks.
XIII.—Brazilian	Milreis ...	12·631957	78·852230 reis	15,432·348	1,216·8743 milreis.
XIV.—Austrian	Florin	9·409875	10·627134 kreutzers	15,432·348	1,640·0162 florins.

XV.—Dutch	Guilder ...	9·333485	10·714112 cents	15,432·348	1,653·4499 guilders.
XVI.—British Indian	Rupee	7·533407	2·123863 annas	180·	382·2954 annas.
XVII.—Scandinavian	Crown	6·222721	16·070140 ores	771·174	1,240· crowns.
XVIII.—German	Mark	5·531340	18·078906 pfennigs	15,432·348	1,395· marks.
XIX.—French...	Franc	4·480359	22·319640 centimes	15,432·348	3,444·444 francs.
		SILVER.			
I.—Shanghai	Tael	513·0572	1·9491 cash	—	1·110675 taels.
II.—Trade	Dollar	378·0000	0·2645 cent	—	—
III.—Mexican	,, ...	377·0586	0·2652 ,, ...	15,432·348	40·92825 dollars.
IV.—Japanese	Yen	374·4000	0·2671 sen	5,797·0632	15·483609 yens.
V.—Javanese	2½ Guilder ...	364·5892	0·2742 cent	3,798·	10·41724 dollars.
VI.—Philippine	Dollar	360·5614	0·2773 centavos	15,432·348	42·80089 ,,
VII.—Peruvian	Sol	347·2278	0·2880 centesimos	15,432·348	44·4444 sols.
VIII.—Bolivian	Boliviano ...	312·5050	0·3200 ,, ...	15,432·348	49·3083 bolivianos.
IX.—Russian	Rouble... ...	277·7221	0·3601 copecks	6,319·6	22·7551 roubles.
X.—Siamese	Tical	206·2850	0·1551 phar-nungs ...	236·	1·14444 ticals.
XI.—Austrian	Florin	171·4708	0·5832 kreutzers	15,432·348	45·0000 florins.
XII.—British Indian	Rupee	165·0000	1·1636 pice	180·	1·090909 rupees.
XII.—Persian...	Kran	63·0316	0·3173 shahis	142·17	2·25555 krans.

It will be noticed that the following appear under both gold and silver :—Persia, Russia, Austria, and British India. The standards of Russia and Austria have recently become gold. Persia has announced that gold is to be the standard. The aim of British India is to possess an effective gold standard by the possession of gold on the weight given against the rupee under gold. Chili has altered the gold standard, which was 21·180900 troy grains of pure gold.

TABLE II.

RATES OF EXCHANGE BY WEIGHTS IN THE BRITISH ISLES UPON THE FOLLOWING COUNTRIES. RATIO, 20·725 PARTS OF SILVER TO 1 PART OF GOLD.

Explanation of Letters.—Variable, V. Troy grains of pure gold, G. Fixed, F. Pure silver, S. Currency, C. Equivalent of gold for silver at the ratio of the day A.

Upon	Variable Gold Weights in Britain.	Fixed Gold or Silver Weights.	
I.—Egypt	112·7653 V. G. for	114 7781 F. G.	
II.—Turkey	100·5436 ,,	102·0804 ,,	
III.—Portugal... ...	18·951 ,,	25·0885 ,, C.	
IV.—Uruguay ...	17·4562 ,,	24·0150 ,, C.	
V.—Newfoundland .	23·1453 ,,	23·5451 ,,	
VI.—United States, N.A.	23·1654 ,,	23·22 ,,	
VII.—Venezuela ...	21·8743 ,,	22·4017 ,,	
VIII.—Argentine Rep.	9·472 ,,	22·4017 ,, C.	
IX.—Cuba	12·1675 ,,	21·5019 ,, C.	
X.—Chili	10·5742 ,,	21·1762 ,, C.	
XI.—Russia	10·6573 ,,	17·9197 ,, C.	
XII.—Brazil	9·4567 ,,	12·682 ,, C.	
XIII.—Austria-Hung.	8·9392 ,,	9·4098 ,, C.	
XIV.—Netherlands ...	9·472 ,,	9·364 ,,	
XV.—Scandinavia ...	6·3721 ,,	6·228 ,,	
XVI.—Germany ...	5·5837 ,,	5·5312 ,,	
XVII.—France	4·4972 ,,	4·4803 ,,	
XVIII.—Italy	4·3568 ,,	4·4803 ,, C.	
XIX.—Belgium	4·4983 ,,	4·4803 ,,	
XX.—Spain	4·3478 ,,	4·4803 ,, C.	
XXI.—Shanghai ...	25·6372 ,,	513·0607 F.S.	24·7756 A. G.
XXII.—Cochin China ..	18·3742 ,,	378·0000 ,,	18·2386 ,,
XXIII.—Mexico	18·7652 ,,	377·0586 ,,	19·1933 ,,
XXIV.—Japan	18·5478 ,,	374·4000 ,,	18·0651 ,,
XXV.—Java	8·5816 ,,	364·5892 ,,	17·5917 ,, C.
XXVI.—Penang	17·6821 ,,	360·5614 ,,	17·3978 ,,
XXVII.—Peru	13·7426 ,,	347·2278 ,,	16·7540 ,, C.
XXVIII.—Bolivia	12·5622 ,,	312·5050 ,,	15·0786 ,, C.
XXIX.—Siam	9·7453 ,,	206·2850 ,,	9·9909 ,,
XXX.—India	6·3648 ,,	165·0000 ,,	7·9648 ,, C.
XXXI.—Persia	2·9135 ,,	63·0316 ,,	3·0413 ,, C.